Minnesota Pollution Control Agency

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February 4, 2014

Administrative Law Judge James E. LaFave
Office of Administrative Hearings
PO Box 64620
600 Robert Street North
St. Paul, MN 55101

RE: Proposed Amendments to Minnesota Rules Chapters 7050 and 7053
Governing Water Quality Standards – River
Eutrophication, Total Suspended Solids and Minor Corrections
OAH Docket # 60-2200-30791, Revisor ID 4104

Dear Judge LaFave:

Please find enclosed, the Final Response to Comments (Response) from the Minnesota Pollution Control Agency (MPCA) for the proposed amendments referenced above. This Response and the Attachments to it are in addition to the Response submitted on January 28, 2014 and address only the comments that were available for MPCA review after the post-hearing comment period which ended on January 28, 2014. (Comments HE-8-12 through HE-8-18).

If you have any questions regarding the enclosed Response or Attachments or about the proposed rules, please contact Carol Nankivel at 651/757-2597 or carol.nankivel@state.mn.us.

Sincerely,

Shannon Lotthammer
Division Director
Environmental Analysis and Outcomes Division

SL:CN:jlr

Enclosure

wq-rule4-06s

State of Minnesota
Minnesota Pollution Control Agency

In the Matter of Proposed Amendments To Minnesota Rules Chapters 7050 and 7053 for Rule Amendments Governing Water Quality Standards- River Eutrophication, Total Suspended Solids and Minor Corrections.
OAH Docket # 60-2200-30791,
Revisor ID # 4104.

Staff Post-Hearing Rebuttal Response to Public Comments

February 4, 2014

MPCA Rebuttal Response to Comments Submitted during the Post-hearing Comment Period.

## I. Introduction

This memorandum and Attachments I and II constitute the Minnesota Pollution Control Agency's (MPCA or Agency) post-hearing rebuttal response to public comments (Rebuttal). The Rebuttal responds to public comments received during the post-hearing comment period that were not previously addressed by MPCA in the Staff Post-Hearing Response to Comments filed with the Office of Administrative Hearings on January 28, 2014 (Response). Specifically, this Rebuttal responds to comments in Hearing Exhibits 8-12 through 8-16 that present issues not previously addressed in the Agency's 1/28/14 Response. The spreadsheet in Attachment I contains MPCA's detailed response to every comment submitted in the post-hearing comment period that was not previously addressed in the Agency's 1/28/14 Response. Attachment II contains a listing of all public comment exhibits (HE-8-1 through HE-8-19) submitted during the pre-hearing rule comment period, at the rule hearing, and during the post-hearing comment and rebuttal periods up to the time of submittal of this Rebuttal.

## II. Response to general categories of comments

Many comments reviewed for rebuttal fell in to the same general categories addressed in MPCA's 1/28/14 Response. Commenters also raised issues in several additional categories. This section provides summary responses to general categories of comments identified by multiple commenters. The general categories of comments are:

A. Comment regarding notice to state agencies;
B. Comments regarding definitions;
C. Comments regarding proposed River Nutrient Regions (RNRs);
D. Comments regarding analysis underlying proposed water quality standards (river eutrophication and TSS);

E. Comments indicating the analysis underlying the statewide TSS standard is wrong;
F. Comments regarding the reasonableness of the TSS standard for the Red River;
G. Comments requesting a TSS standard for the Minnesota River;
H. Comments regarding standards for Lake Pepin;
I. Comments regarding the economic analysis provided for the rule amendments; and
J. Comments regarding implementation issues.

### A. Comment regarding notice to state agencies

Comment HE-8-15 (MnDOT) requests MPCA acknowledge that MnDOT is affected by the proposed rule and cites a reference in SONAR[1] Book 1, pg. 20, to a statutory requirement for notification. The cited reference provides a discussion of the statutorily required notifications for rulemaking. Minn. Stat. § 174.05 subd. 1 (2013) requires specific notification of MnDOT for rules adopted under authority of Minn. Stat. § 116.07 (2013) (air quality, hazardous waste, solid waste and noise). The proposed amendments are not being adopted under authority of Minn. Stat. § 116.07 and do not address those areas of regulation; therefore no specific notification of the MnDOT Commissioner was required. MnDOT staff registered with the MPCA's GovDelivery system were routinely notified throughout the rulemaking process. The MPCA acknowledges that MnDOT may be affected by the proposed rule as a stormwater discharger permittee. SONAR Book 2, pg. 106, discusses costs of the proposed rule to stormwater permittees.

### B. Comments regarding definitions

Comment HE-8-14 (MCSC) and HE-8-15 (MnDOT) request clarification on the extent to which the term "rivers and streams," which is used in multiple locations in the proposed rules, applies to ephemeral streams, road-side ditches, county ditches, swales, or components of storm sewer systems.

Minnesota Statutes do not define the term "rivers and streams." The only MPCA rule defining the term governs petroleum contaminated soils.[2] That definition defines "rivers and streams" as including "natural watercourses," "altered natural watercourses," or "public waters," as each term is defined in Minn. Stat. § 103G.005[3] which governs waters of the state.

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[1] Statement of Need and Reasonableness (SONAR)

[2] Minn. R. § 7037.0100, subp. 21 (2013). "Rivers and streams" means a watercourse defined as natural watercourses, altered natural watercourses, or public waters in Minnesota Statutes, section 103G.005, subdivisions 3, 13, and 15.

[3] Minn. Stat. § 103G.005 DEFINITIONS (2013).
Subd. 3. Altered natural watercourse. "Altered natural watercourse" means a former natural watercourse that has been affected by artificial changes to straighten, deepen, narrow, or widen the original channel.
Subd. 13. Natural watercourse. "Natural watercourse" means a natural channel that has definable beds and banks capable of conducting confined runoff from adjacent land.
Subd. 15. Public waters.
(a) "Public waters" means:
(1) water basins assigned a shoreland management classification by the commissioner under sections 103F.201 to 103F.221;
(2) waters of the state that have been finally determined to be public waters or navigable waters by a court of competent jurisdiction;
(3) meandered lakes, excluding lakes that have been legally drained;

Minnesota Statutes chapter 115 is the foundation for Minnesota Rules Chapters 7050 and 7053, which are the subject of this rule hearing. Minn. Stat. § 115.01, subd. 22, defines "waters of the state"[4] very expansively and inclusively. The definition includes the terms "stream," "watercourses," "waterways," "drainage systems" and other waters which "flow through, or border upon the state or any portion thereof." Each of these terms or phrases relates to the undefined term "rivers and streams." The inclusion of these undefined terms within the definition of "waters of the state," and in many other parts of Minnesota Statutes and Rules, indicates that they are common terms. Minn. R. § 7050.0130, subp. 7,[5] directs the Agency to construe undefined terms within the context in which they are being used and within current professional usage.

The requested clarification asks for general determinations to be applied to large classes of water features where individual features within the class have characteristics that vary widely. For example, a county ditch may in some cases be part of a stream and in other cases not part of a stream.

The present rulemaking is not an appropriate forum for creating or altering fundamental definitions that affect common terms used in multiple statutory chapters affecting multiple agencies and local units of government. It is also not an appropriate forum for the MPCA to provide general determinations that should be properly considered in an individualized assessment.

Comment HE-8-15 (MnDOT) also requests clarification on whether various types of lakes and wetlands would be governed by river eutrophication water quality standards. Separate numeric eutrophication standards apply to lakes and shallow lakes.[6] While there are no numeric eutrophication standards for wetlands, the narrative eutrophication standard[7] continues to

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(4) water basins previously designated by the commissioner for management for a specific purpose such as trout lakes and game lakes pursuant to applicable laws;
(5) water basins designated as scientific and natural areas under section 84.033;
(6) water basins located within and totally surrounded by publicly owned lands;
(7) water basins where the state of Minnesota or the federal government holds title to any of the beds or shores, unless the owner declares that the water is not necessary for the purposes of the public ownership;
(8) water basins where there is a publicly owned and controlled access that is intended to provide for public access to the water basin;
(9) natural and altered watercourses with a total drainage area greater than two square miles;
(10) natural and altered watercourses designated by the commissioner as trout streams; and
(11) public waters wetlands, unless the statute expressly states otherwise.

(b) Public waters are not determined exclusively by the proprietorship of the underlying, overlying, or surrounding land or by whether it is a body or stream of water that was navigable in fact or susceptible of being used as a highway for commerce at the time this state was admitted to the union.

[4] Minn. Stat. § 103G.005 DEFINITIONS (2013).
Subd. 22. Waters of the state. "Waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

[5] Minn. R. § 7050.0130, subp. 7 (2013). Other terms. Other terms and abbreviations used in this chapter are defined in the part in which they are used. Terms and abbreviations used in this chapter that are not specifically defined in applicable federal or state law shall be construed in conformance with the context, and in relation to the applicable section of the statutes pertaining to the matter, and current professional usage.

[6] Minn. R. § 7050.0222, subparts 2, 2a, 3, 3a, 4, 4a and 5 (2013).

[7] Minn. R. § 7050.0150, subp. 3. Narrative standards. For all Class 2 waters, the aquatic habitat, which includes the waters of the state and stream bed, shall not be degraded in any material manner, **there shall be no material increase in undesirable slime growths or aquatic plants, including algae,** nor shall there be any significant increase in harmful pesticide or other residues in the waters, sediments, and aquatic flora and

apply. Lake and wetland eutrophication standards are beyond the scope of the present rule amendments.

Comment HE-8-15 (MnDOT) requests definitions for the terms "wadeable" and "nonwadeable." The MPCA is not proposing different standards for different stream types and flows (i.e. wadeable and nonwadeable). Therefore, definitions of these terms are not needed in the proposed rule. The terms are used throughout the SONAR Book 2 in the discussion of the development of the eutrophication standards, but the terms are not used in the proposed rules as a way to classify streams, but rather were used for exploratory analyses. The terms "wadeable" and "non-wadeable" are defined in the SONAR Book 2, Exhibit EU-1, pg. 29.

### C. Comments regarding proposed River Nutrient Regions (RNRs)

Comments HE-8-12 (Scott) and HE-8-13 (Poplar River) identify specific concerns regarding the age, level of detail and extent of the data used in the scientific analysis supporting the MPCA's proposal to adopt River Nutrient Regions (RNRs). Ecoregion analysis developed by the United States Environmental Protection Agency (EPA) provides the scientific basis for the Minnesota River Nutrient Regions. Ecoregions are a cohesive scientific concept for regionalization of land and water systems which is reasonably used for multiple applications, including the regional application of water quality standards. As guided by EPA, MPCA's choice of using ecoregions is reasonable and the regions are mapped correctly at the ecoregional scale.

### D. Comments regarding analysis underlying proposed water quality standards (river eutrophication and TSS)

#### a. Confounding factors analysis

Comments HE-8-14 (MCSC), HE-8-16 (MCES) and the hearing testimony of John Hall, request MPCA perform what they label a "Confounding Factors Analysis." The concern expressed is that additional covarying factors could be driving the biological response and obscuring the response to the stressor of interest (in this case TSS, total phosphorus, chlorophyll-a, $BOD_5$ or DO flux). The following list summarizes the methods used by MPCA to develop the water quality standards and the conclusions of those methods.

1. A **literature review**, covering decades of research, documents the well-established impacts of nutrients and related response variables on biological communities (SONAR, Book 2, Exhibit EU-1 pgs. 3-7).
2. The MPCA developed a **conceptual model of the impacts** of nutrients on biological communities (SONAR Book 2, Exhibit EU-1, Figure 1) and collected data to empirically test this model. As illustrated by the conceptual model in Figure EU-1 (included below) a number of covarying factors were appropriately considered. The data used to

fauna; the normal fishery and lower aquatic biota upon which it is dependent and the use thereof shall not be seriously impaired or endangered, the species composition shall not be altered materially, and the propagation or migration of the fish and other biota normally present shall not be prevented or hindered by the discharge of any sewage, industrial waste, or other wastes to the waters.

empirically test the model supported the relationships predicted by this conceptual model (SONAR Book 2, Exhibit EU-1, pgs. 44-54) and demonstrated the pathways for impacts to the biology.

3. The **relationship between other major stressors and total phosphorus was assessed** to determine how and if these stressors covary. SONAR Book 2, Exhibit EU-1, Figure 9, demonstrated that although there is a relationship between total phosphorus and total suspended solids and habitat (scored from 0-100 as measured by the Minnesota Stream Habitat Assessment tool [MSHA]), there are also many streams that lack these stressors but still have elevated concentrations of total phosphorus. Despite the relationship between total phosphorus and habitat, MPCA did not observe streams with high concentrations of total phosphorus with healthy biological communities. This indicates that even in the absence of other stressors, phosphorus negatively impacts biological communities. Furthermore, to minimize the impact of habitat on biological communities, sites determined to be channelized (i.e., sites with low-quality habitat) were eliminated from the analysis.

4. The MPCA used **analyses** that minimized the impacts of covarying stressors (i.e., quantile regression and changepoint) **to identify biological thresholds** from field-collected data. The Minnesota Cities Stormwater Coalition (MCSC) quotes the Total Suspended Solids Technical Support Document (SONAR Book 3, Exhibit TSS-1) out of context as evidence that field collected data is not suitable for the development of water quality standards:

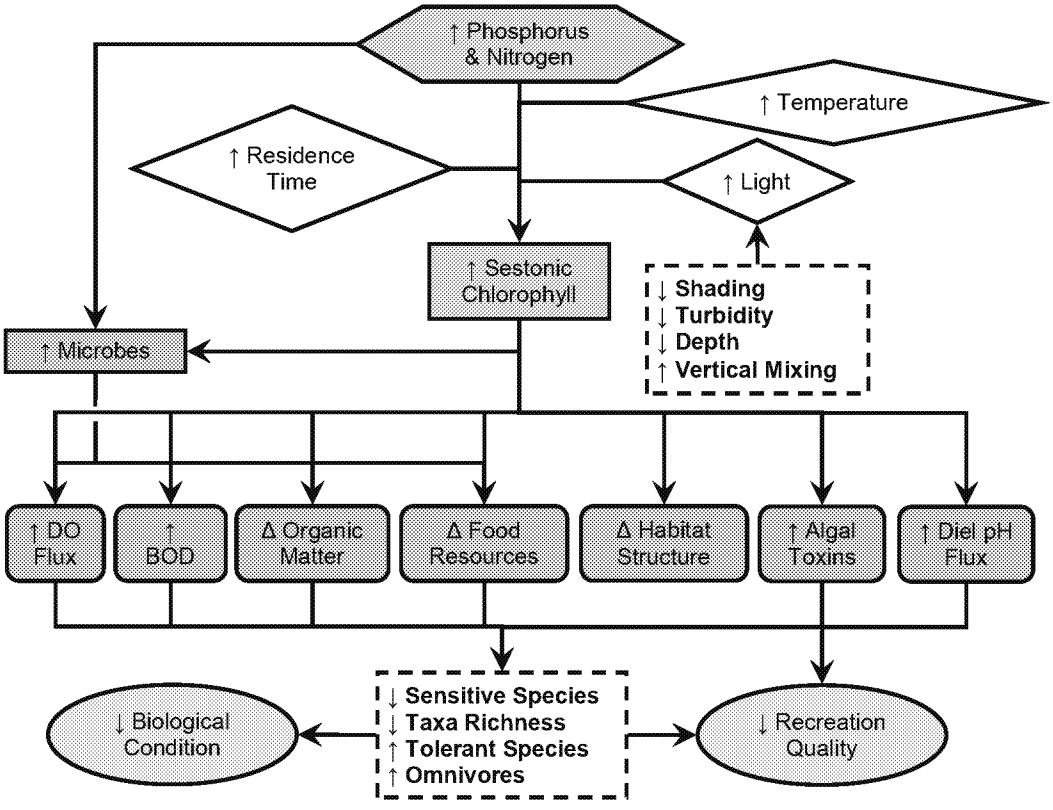
    - TSS-1, page 16: "Some disadvantages of using field–collected data include the lack of control of environmental and process variables."
    - TSS-1, page 17: "Limitations to biological measures inside the wedge are caused by other unmeasured variables (Figure 2). In combination with sediment or alone there are a number of other factors (e.g., nutrients, habitat) that can limit biological condition in Minnesota streams and rivers. As a result of these different factors reducing biological measures, there is unequal variation of the response variable at different levels of the predictor variable. This unequal variation often makes field-derived data (e.g., biomonitoring data) less suitable for the more traditional least squares regression."

    The commenter uses these quotes to support the argument that field collected data should not be used in any analysis. The statements apply only to challenges that are specific to certain datasets that then lead to the choice of analysis methods for that specific dataset. The statements cannot be generalized to other datasets and other resulting analysis choices. This language was part of the SONAR Book 3, Exhibit TSS-1, and establishes that least squares regression was not appropriate for these datasets of field-collected biological data; which is why the MPCA chose to use quantile regression and changepoint analyses. By pointing out some of the disadvantages of field-collected biological data, the MPCA was demonstrating that certain techniques are better suited for these particular datasets. Quantile regression analysis is particularly powerful as it

minimizes the effect of covarying stressors. This method fits the outside of the data plot and thereby provides a better fit for the response of the biological community to the stressor of interest (i.e., total phosphorus, Chl-a, DO flux and $BOD_5$). A more detailed description can be found in SONAR Book 2, Exhibit EU-1, p. 26, Figure 11. The changepoint analysis also offers similar advantages of minimizing the effect of covarying stressors over the least squares regression analysis. Figures of the response of the biological community to the stressor of interest using quantile regression and changepoint analyses can be found in SONAR Book 2, Exhibit EU-1, Appendix IV, Figures 1-34.

5. Finally, these biological analyses were not used alone, but rather were supported by **other lines of evidence** as recommended by the Science Advisory Board (SAB) report (SONAR Book 2, Exhibit EU-20).

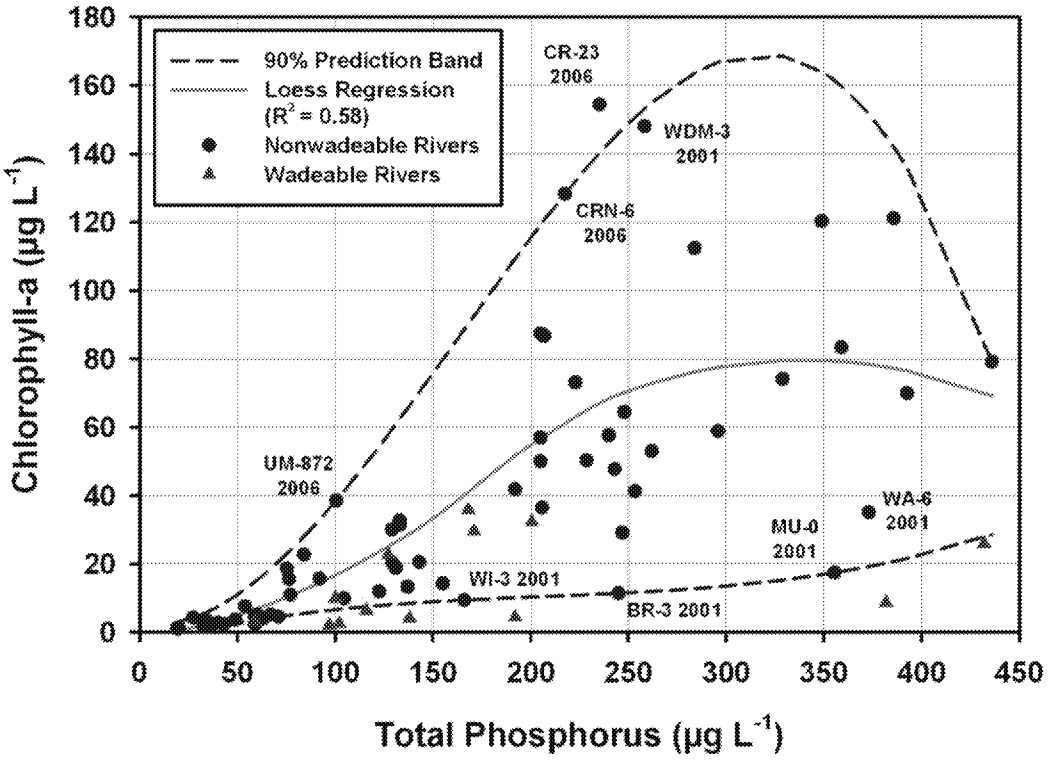
It is reasonable for MPCA to use the multiple methods outlined as a basis for the river eutrophication and TSS water quality standards. These methods recognize and account for covarying factors.




**EU-1, Figure 1. Conceptual model of the impact of nutrient enrichment on biological condition and recreational quality for medium to large rivers.**

b. Wadeable and nonwadeable streams

Comment HE-8-14 (MCSC) and the testimony of John Hall suggested that different standards should be developed for wadeable and nonwadeable streams. As part of their argument, they suggest that the MPCA documented "meaningful and significant differences between large and small streams and rivers." This statement is not correct. No statistically significant differences in the biological thresholds were identified between wadeable and nonwadeable streams within any of the three regions (SONAR Book 2, Exhibit EU-1, Figure 48). While not statistically significant, the nonwadeable streams did have somewhat lower biological thresholds than the wadeable streams. These differences were driven by the physical characteristic of these systems. Specifically, nonwadeable streams are more likely to have the physical conditions (i.e., greater residence time, less shading, etc.) to grow undesirable levels of algae compared to wadeable streams. Despite this, there are wadeable streams in Minnesota that will be negatively impacted by nutrient levels at or above the proposed standard because the physical conditions within these streams are suitable to grow large amounts of algae. For example, despite being a relatively small dataset, there are three wadeable streams in the River Nutrient Study that had measured levels of sestonic chlorophyll between 30-40 µg/L (SONAR Book 2, Exhibit EU-1, Figure 21 included below). However, due to differences in these stream types and the structure of the proposed standard (i.e., inclusion of both the nutrient and response), fewer wadeable streams than nonwadeable streams will be impaired for eutrophication. Regardless, wadeable streams are protected for the aquatic life beneficial uses and it is necessary to have standards to protect the beneficial uses of these systems. Therefore, it is reasonable to apply the same standards to wadeable and nonwadeable streams because they can each have characteristics that are needed to grow large amounts of algae and each require the protection of the proposed standard.




**EU-1, Figure 21. Relationship between TP and chlorophyll-a for River Nutrient Study data. The regression fits were based on nonwadeable streams only using a LOESS regression and the 90% prediction interval was estimated using the 95th and 5th quantile smoothing splines regression lines (nonwadeable streams: n=63; wadeable streams: n=13).**

### E. Comments indicating the analysis underlying the statewide TSS standard is wrong

Two commenters (HE-8-4 Nelson and HE-8-5 Poplar River) challenge several of the data choices in the analyses supporting the TSS water quality standards. The commenters incorrectly characterize several of the data choices, and are incorrect about the impact of other data choices on the analysis. Detailed responses to each assertion by the commenter are included in Attachment I. The proposed TSS standard provides an approach that acknowledges regional differences in TSS generated from the landscape, more complete use of biological effects data, and use of a seasonal and weather-related data. Further technical discussion is found in the SONAR Book 3, pgs. 5–10. The data choices and analysis supporting the TSS water quality standard are reasonable.

Comment HE-8-14 (MCSC) questions the exclusion of storm events from data sets used to develop the statewide TSS standard. Storm events are included in the analysis; the events were not considered bias factors nor excluded.

### F. Comments regarding the reasonableness of the TSS standard for the Red River

Comment HE-8-14 (MCSC) requests MPCA use indices of biological integrity (IBI) to establish the reference condition for the TSS standard for the Red River in proposed rule section 7050.0222. MPCA followed the process recommended by EPA to establish the reference condition for the TSS standard for the Red River. Consistency between federal guidance and state practice is reasonable.

The EPA guidance is included in SONAR Book 2, Exhibit EU-14. Specifically, MPCA followed the guidance for using reference reaches to establish criteria using the following recommended method (Exhibit EU-14, pg. 94):

> *"USING REFERENCE REACHES TO ESTABLISH CRITERIA*
>
> *One approach that may be used in developing criteria is the reference reach approach. Reference reaches are relatively undisturbed stream segments that can serve as examples of the natural biological integrity of a region. There are three ways of using reference reaches to establish criteria.*
>
> 1. *Characterize reference reaches for each stream class within a region using best professional judgment and use these reference conditions to develop criteria.*
> 2. *..."*

The reference condition (reference reach) is the benchmark against which the condition of Minnesota waters are compared to determine if Clean Water Act goals[8] are attained. Reference conditions offered the best approach to development of the TSS water quality standard for a unique system like the Red River. The selection of reference sites based on biological measures is not appropriate because using the sites with the "highest" IBI scores is not linked to the attainment of Clean Water Act goals. To avoid circularity, the reference site selection approach should be based on an *a priori* predictor of stress to aquatic life that is independent of the biology (see SONAR Book 2, Exhibit EU-1, p. 25).

### G. Comments requesting a TSS standard for the Minnesota River

Comment HE-8-14 (MCSC) requests MPCA establish a TSS standard for the Minnesota River that is separate from the South River Nutrient Region (RNR) TSS standard proposed in rule section 7050.0222. Applying the South RNR standard to the Minnesota River is based on available monitoring information. The average TSS concentration for Minnesota River mainstem segments is high, but fits well within the range of average TSS concentrations for streams in the South RNR as a whole. In contrast, the average TSS concentration for Red River mainstem segments is almost twice that for the Minnesota River, and is an outlier when looking at the South RNR region as a whole. Because the Minnesota River data fit well within the South RNR

[8] The Clean Water Act interim goal is used as the goal for most water quality standards. The Clean Water Act interim goal is: "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water (33 U.S.C § 1251(a)(2)).

data, there is no need for a separate or site-based standard at this time for the Minnesota River. Applying the South RNR standard to the Minnesota River is reasonable.

### H. Comments regarding standards for Lake Pepin

Comment HE-8-16 (MCES) question aspects of the underlying scientific analysis for the Lake Pepin eutrophication water quality standard; specifically age of data used and model uncertainty. The model used the most recent data available (1985-2006) at the time of the model development in 2007 (SONAR Book 2, Exhibit EU-6). The data covered a time period (2004-2006) when there were substantial reductions in phosphorus loading due to the commenter's efforts. The model incorporated these reductions. Model uncertainty is present in any model and was within reasonable limits. The Lake Pepin modeling choices were reasonable.

### I. Comments regarding the economic analysis provided for the rule amendments

Several comments (HE-8-14 (MCSC) and HE-8-16 (MCES)) reiterated earlier comments regarding the sufficiency of the economic analysis provided for the rule amendments. The new comments do not provide new perspectives or data. Section IV. G. of MPCA's 1/28/14 Response applies to the additional comments. Under the Clean Water Act, cost is not a determinative factor in establishing water quality standards for the protection of beneficial uses of water. Minnesota statutes require an analysis of reasonable expected costs, not a full cost/benefit analysis. Like the federal requirements, the state required cost analysis is not determinative of need or reasonableness.

### J. Comments regarding implementation issues

Comment HE-8-16 (MCES) raises implementation issues similar to issues addressed in Section IV. H. of MPCA's 1/28/14 Response. As discussed in the 1/28/14 Response, implementation and the regulation of non-regulated parties are beyond the scope of the proposed rule amendments.

## III. Conclusion

The MPCA has demonstrated through the SONAR, the hearing presentation and oral testimony, and responses to comments, that the proposed amendments are needed and reasonable.

| Date Received | Comment # | Subcomment # | Name | Affiliation | Address | Summary of Comment | Response |
|---|---|---|---|---|---|---|---|
| 1/28/2014 | HE-8-12 | 1 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "The claim that there are distinct regions in the state with respect to water quality in streams has not been definitively demonstrated." | Established in Exhibits EU-5, 10, 11, and 12. Also Figure 24 (page 84) in Book 2 SONAR. See also MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) -Spreadsheet Summary of Comments and MPCA Responses and Attachment II-Response to Comments on Regionalization. |
| | | 2 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "The MPCA's supporting technical documentation (Regionalization of Minn Rivers for Applic of River Nutrient Criteria-Exhibit EU-5) contains no data or additional analyses to support the claim (of distinct regions) other than the McCollor and Heiskary 1993 document (Exhibit EU-30)." | See MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) -Spreadsheet Summary of Comments and MPCA Responses and Attachment II-Response to Comments on Regionalization. |
| | | 3 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "The data in Exhibit EU-30 (McCollor and Heiskary) is now fairly old- most recent data is over 20 years old." | Yes, but there has been no change in overall regional patterns. The table in question is cited in SONAR Book 2, Exhibit EU-5. This information was used to provide a perspective on regional differences in support of development of the River Nutrient Regions. See also MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 4 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "In Exhibit EU-5, the number of minimally impacted streams is small and therefore does not form a very robust basis for the claim of distinct regions." | Comment is declarative, no response required. The table in question is cited in SONAR Book 2, Exhibit EU-5 and was used to provide a perspective on regional differences in support of development of the River Nutrient Regions. See also MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 5 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "In Exhibit EU-5, no streams were included from the Lower Minnesota River Basin, which is where I am requesting the change from the Central Region to the Southern Region... Thus there is no analysis supporting the claim that this area belongs in the Central Region." | See response to HE-8-12- 2. The table in question is cited in SONAR Book 2, Exhibit EU-5. This information was used to provide a perspective on regional differences in support of development of the River Nutrient Regions. See also MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) -Spreadsheet Summary of Comments and MPCA Responses. |

| Date Received | Comment # | Subcomment # | Name | Affiliation | Address | Summary of Comment | Response |
|---|---|---|---|---|---|---|---|
| | | 6 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "The cited EPA document (EU-14) contains no analysis of TSS relative to ecoregion differences (for turbidity, but not for TSS)." | See MPCA's Response to Comments dated 1/28/14: -Attachment I (lines 8-10) - Spreadsheet Summary of Comments and MPCA Responses. |
| | | 7 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "Additional EPA guidance (citation provided is "EPA ambient Water Quality Criteria Recommendations) states that its values represent a set of "starting points" for states and tribes to use in establishing their own criteria." | Commenter is correct- the U.S. EPA provides guidance in support of states development of water quality standards. See Exhibits EU-10, 11, 12, and 14. |
| | | 8 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | ..."EPA recommends that States...develop nutrient criteria at the level III ecoregional scale and at the waterbody class scale where those data are readily available." | The MPCA has done this. Commenter is correct as the U.S. EPA provides guidance in support of states development of water quality standards. See also MPCA's Response to Comments dated 1/28/14: -Attachment II, Response to Comments on Regionalization. |
| | | 9 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "the combination of .... (evidence presented)... means that inclusion of the Lower Minnesota River Basin in the Central Region is neither scientifically justified nor reasonable." | See MPCA's Response to Comments dated 1/28/14: -Attachment II. |
| | | 10 | Paul Nelson | Scott County | Scott Co. Natural Resources, Government Center 114, 200 Fourth Ave. West, Shakopee, MN 55379-1220 | "..this matter is not trivial....the proposed regional standard will have regulatory and goal setting consequences." | Declarative, no response required. |
| 1/28/2014 | HE-8-13 | 1 | Curtis Sparks | Poplar River Management Board | Address not provided | "EPA approved a TMDL for the Poplar River....because the lower Mississippi has a TMDL it is not subject to the regional TSS standard... "for the same reasons afforded the Lower Mississippi River, the standard for the Poplar River should be no lower than 12 mg/L TSS based on the USEPA approved TMDL." | There is no basis for speculating that a TMDL goal of 12 mg/L set for the Poplar River will not meet the proposed WQS for TSS of 10 mg/L. See also MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-5-7 (line 23) - Spreadsheet Summary of Comments and MPCA Responses. |

| Date Received | Comment # | Subcomment # | Name | Affiliation | Address | Summary of Comment | Response |
|---|---|---|---|---|---|---|---|
| | | 2 | Curtis Sparks | Poplar River Management Board | Address not provided | "There are eco-region differences in Class 2A waters of the North Shore Streams that should be considered... one standard for all 2A waters does not recognize the unique differences." | See MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-5 7 and HE-8-5-8 (lines 23 and 24) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 3 | Curtis Sparks | Poplar River Management Board | Address not provided | "The increased number of impairments on the North Shore reflects the unique characteristics, not the effect of human activity." | Declarative, no response required. |
| | | 4 | Curtis Sparks | Poplar River Management Board | Address not provided | "Attached reports all demonstrate vastly different characteristics of North Shore Streams." | Rule 7050.0170 allows for changes to an existing standard on a site-specific basis if natural background conditions warrant the change. |
| | | 5 | Curtis Sparks | Poplar River Management Board | Address not provided | "Exhibit HE-8-13 A shows "the mountainous topography that does not exist elsewhere in the state."" | See MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-5-9 (line 25) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 6 | Curtis Sparks | Poplar River Management Board | Address not provided | "It is unreasonable to expect standard compliance that is unattainable due to the natural conditions exhibited by unique geographic factors that exist only in North Shore streams." | See MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-5-8 (line 24) -Spreadsheet Summary of Comments and MPCA Responses. |

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| 1/28/2014 | HE-8-14 | 1 | Jim Hafner/Randy Neprash | Minnesota Cities Stormwater Coalition (MCSC) | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "Revise the proposed TSS standard for the Red River so that it is based on the concentrations found at the sites with the highest IBI scores-namely, sites located nearest the Canadian border ... High IBI scores are a much better criterion for site selection than the MPCA's staff's determination of the "least impacted" location...whether a site is "least impacted" has no value in and of itself." | Reference conditions offered the best approach to development of the WQS for a unique system like the Red River. Use of biology to establish reference conditions is not a valid method. The selection of reference sites based on biological measures is not appropriate because using the sites with the "highest" IBI scores is not linked to the attainment of Clean Water Act ("CWA") goals. To avoid circularity, the reference site selection approach should be based on an a prior predictor of stress to aquatic life that is independent of the biology (see EU-1 p. 25). Note: The reference condition is the benchmark against which the condition of Minnesota waters are compared to determine if CWA goals are attained. Most WQS refer to the CWA interim goal which is defined as: "wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water (U.S. Code title 33, section 1251 [a] [2])." |
| | | 2 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "Please revise the TSS standard to include a separate standard for the Minnesota River and lower reaches of its tributaries, similar to that for the Red River... reasons are: (below). | No response needed. |
| | | 3 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | 1) Mn. River is known for high suspended solids, | Characteristics of the sediment in the Minnesota River is different from that in the Red River based on geomorphology and watershed conditions. |
| | | 4 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | 2) Mn. river is very large, | Size of river is not of consequence. |
| | | 5 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | 3) geological history and geormorphology of the Mn. River is unique in Mn.-natural background levels are different, | See response to HE 8-14-3. |

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| | | 6 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | 4) the derived TSS concentrations and loading rates of the Mn. River TMDL are significantly different from the proposed TSS standard that would apply, | The commenter is correct in stating that the values derived for TSS are used as translators for the existing turbidity WQS. Translator values serve the purpose of estimating loads and proposing targets for the current TMDL process. Differences between these translator values and the proposed WQS for TSS is anticipated and will be addressed as part of the TMDL implementation. |
| | | 7 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | 5) MPCA used special analytic processes to derive the TSS threshold for the Mn. River. | See pg. 18 of Exhibit (TSS-1). |
| | | 8 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | If a separate standard is developed for the Mn. River, all the standards for downstream waters should be reevaluated and revised accordingly. | No separate standard will be developed. |
| | | 9 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | revise the methodology for deriving the proposed standards from reference streams. Specifically, include the high flow data in deriving the TSS threshold concentrations from reference streams. | Contrary to the commenter's assumption, and as previously explained in the response to comment HE-8-4-7, high-flow and storm-event data have not been excluded in the analysis used to derive the TSS threshold concentrations for reference streams. What was excluded was whole data sets that did not give a representative picture of overall conditions because they were biased towards storm events, usually because they were from monitoring programs that were instead specifically designed to determine pollutant loadings. The data used in the analysis for the proposed TSS standard are from sites that were regularly sampled during the index period and include storm events and non-storm events. |
| | | 10 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | It seems absurd that a fundamental driver of TSS loading in receiving waters, storm events, was considered a bias factor, making the modification of a reference stream seem appropriate. If storm events are a driver, the data from those events must be included in the analysis. | Contrary to the commenter's assumption, and as explained in the comment at HE-8-14 (line 9), storm events were not considered to be a bias factor, and are included in the analysis. See also MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-4-7 (line 12) -Spreadsheet Summary of Comments and MPCA Responses. |

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| | | 11 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | The estimated costs for permitted stormwater dischargers appears to be significantly understated | Cost estimates for these sources are not absolute and will depend on factors pertinent to the TMDL process and not taken up as part of this rulemaking. |
| | | 12 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | provide the data and a graph showing the relationships between monitored TSS levels statewide, the percentage of sites, and the proposed TSS standards for each eco-region. | While the actual graph for TSS does not exist, the relevant information regarding the projected number of stream segments that would not meet the criteria under the proposed TSS standard is presented in the MPCA's Response to Comments, (Attachment 1, line 153- comment 3 of Randy Neprash testimony). |
| | | 13 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | provide the quantitative information that supports selecting the 90th percentile to control for the effects of large storm events. | Contrary to the commenter's assumption, the 90th percentile was not chosen to control for the effects of large storm events. As explained in page 25 of the Technical Support Document (TSS-1), the 90th percentile was chosen both because it is readily calculable and because it is indicative of water quality problems. Again, storm events were not excluded from the analysis. |
| | | 14 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | correct all the sections of all the MPCA's documentation that are based on erroneously identifying all urban stormwater as nonpoint sources and excluding permitted urban stormwater dischargers from "municipal dischargers". | "Nonpoint source" is often used to mean watershed runoff. It is recognized that from a regulatory perspective some urban stormwater is considered a "point source" and regulated by NPDES permitting. |
| | | 15 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | SONAR Book 3, page 22 does not address the costs of permitted urban stormwater. | A reasonable effort to discuss costs associate with urban stormwater (NPDES) permits is provided in SONAR Book 3, pp. 24-25. |
| | | 16 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | there should be different TSS and Eutrophication standards for large and small streams and rivers. | The MPCA disagrees with the need for different standards applicable to large and small streams and rivers. The basis for applying one standard to rivers and streams was addressed for phosphorus in Exhibit EU-1 (pages 74-75). The MPCA did not specifically address this issue in SONAR or exhibits for TSS. However, because data is limited for comparing biological endpoints between wadeable and non-wadeable streams, the MPCA does not believe justification exists for separate TSS standards for large and small rivers and streams. |

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| | | 17 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | there is a strong probability that there should be a different methodology used to develop the WQ standards for the larger rivers. | The MPCA disagrees. However, by proposing a numeric translator for periphyton (Exhibit EU-1, pages 95-96) the MPCA provides an alternative basis for evaluating eutrophication impacts in streams and may be a particularly useful approach for wadeable streams . |
| | | 18 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "Why were significant differences between large and small rivers and streams presented in the documentation but not considered to be sufficient to justify separate standards?" | This statement is not correct. No statistically significant differences in the biological thresholds were identified between wadeable and nonwadeable streams within any of the three regions (see Exhibit EU-1 Figure 48). While not statistically significant, the nonwadeable streams did have somewhat lower biological thresholds than the wadeable streams. These differences were driven by the physical characteristic of these systems. Specifically, nonwadeable streams are more likely to have the physical conditions (i.e., greater residence time, less shading, etc.) to grow undesirable levels of algae compared to wadeable streams. However, in Minnesota there are wadeable streams that will be negatively impacted by nutrient levels at or above the proposed standard because the physical conditions within these streams are suitable to grow large amounts of algae. Due to differences in these stream types and the structure of the proposed standard (i.e., inclusion of both the nutrient and response), fewer wadeable streams than nonwadeable streams are expected to be impaired for eutrophication. Regardless, impaired wadeable streams will be identified and the MPCA deems it necessary to have these standards to protect these systems. Therefore, it is reasonable to apply the same standards to wadeable and nonwadeable streams because they can both have the characteristics that are needed to grow large amounts of algae and both require the protection of the proposed standard. |
| | | 19 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "...develop different and separate TSS standards for highflow and low flow conditions." | The proposed TSS standard takes into account both high-flow and low-flow conditions, and is based on the overall condition of a stream during the index period, taking into account the whole range of flow and weather conditions. It is neither necessary nor appropriate to have separate standards for separate conditions; the comparison is against the overall condition of reference streams, which exhibit the same range of flow and weather conditions as do the streams to be assessed. |

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| | | 20 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "...withdraw the proposed TSS standards and develop them only when there is sufficient biological data and programmatic support for sound standard development." | The need and reasonableness of the proposed standard is based on sound science as discussed in SONAR Book 2, pages 5 -10, and its technical basis supported by the U.S. EPA (Exhibit HE-8-11) . |
| | | 21 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "according to statements in the MPCA's documentation, the biological data and programs are not currently sufficiently robust to support this rulemaking. The MPCA's response appears to have been to omit the appropriate data or use a tortured, non-quantitative process to work the insufficient biological data into the rulemaking analysis." | This comment includes no specific criticisms of the approaches the MPCA used. However, the MPCA reiterates that it followed the recommendations of the SAB report (Exhibit EU-20). In addition, Lester Yuan, principal author of EPA guidance, stated that the MPCA has put together a coherent rationale for nutrient criteria (Exhibit EU-44). Finally, EPA Region 5 and technical reviewers for EPA Headquarters indicate the criteria are scientifically defensible. |
| | | 22 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "It is wise to give (the biological monitoring/data collection) programs time to come to fruition. Then, when the data and programmatic support is sufficient, this TSS standard can be developed properly." | The MPCA has been developing its biological monitoring and assessment program since the 1960s. In the early 1990s, this program was expanded to support efforts such as the development of the water quality standards and biological assessments. In the last 20 years, the MPCA has developed a robust biological monitoring program that is among the top programs in the U.S. Due to these efforts, the biological monitoring program is more than sufficient to develop and implement the TSS standard. |
| | | 23 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "We request that the validation process proposed by Mr. Nelson at the hearing be done. (validation to test the soundness of the proposed TSS standard.) and explain why this relatively simple and instructive "validation process" was not considered to be of sufficient value." | As explained in the Response to Comments (Attachment I, HE-8-4-8), the criterion in the TSS standard would be met by the average reference stream and by streams of better quality than those chosen as reference streams. The streams that are not projected to fail the TSS criterion would be projected to meet the criterion. See also MPCA's Response to Comments, (Attachment I- comment 3 of Randy Neprash testimony, line 153). |

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| | | 24 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "Request that the MPCA request EPA staff to comment on the issues raised by John Hall regarding the "46-page SAB critique referenced by John Hall (EU-18)." | The SAB advises EPA. EPA generates guidance considering input from the SAB. MPCA reasonably followed EPA guidance. |
| | | 25 | Jim Hafner/Randy Neprash | MCSC | Stantec 2335 W. Highway 36, St. Paul, MN 55113 | "Revise the TSS standards to be non-instantaneous, in a manner similar to the proposed standards for Lower Miss. Pools 2-4. (chronic vs. instantaneous)." | Contrary to the commenter's assumption, the proposed TSS standard is not an instantaneous standard. It instead looks at the whole range of conditions through the entire index period, with the criterion that TSS concentrations must be at or below a certain level 90 percent of the time. |

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| | | 26 | Jim Hafner/Randy Neprash | MCSC | Stantec<br>2335 W. Highway 36,<br>St. Paul, MN 55113 | "Provide definitions of "rivers and streams". Definitions should make clear whether the standards apply to road-side ditches, county ditches, swales, components of storm sewer systems." | Comment HE-8-14 (MCSC) requests clarification on the extent to which the term "rivers and streams," which is used in multiple locations in the proposed rules, applies to road-side ditches, county ditches, swales, and components of storm sewer systems. Minnesota Statutes do not define the term “rivers and streams.” The only MPCA rule defining the term governs petroleum contaminated soils. That definition defines "rivers and streams" as including “natural watercourses,” “altered natural watercourses,” or “public waters” as each term is defined in Minn. Stat. § 103G.005, which governs waters of the state. Minnesota Statutes chapter 115 is the foundation for Minnesota Rules Chapters 7050 and 7053, which are the subject of this rule hearing. Minn. Stat. § 115.01, subd. 22, defines “waters of the state” expansively. The definition includes the terms “stream,” “watercourses,” “waterways,” “drainage systems” and other waters which “flow through, or border upon the state or any portion thereof.” Each of these terms or phrases relates to the undefined term “rivers and streams.” The inclusion of these undefined terms within the definition of “waters of the state,” and in many other parts of Minnesota Statutes and Rules, indicates that they are common terms. Minn. R. 7050.0130, subp. 7, directs the Agency to construe undefined terms within the context in which they are being used and within current professional usage. The requested clarification asks for determinations to be applied to large classes of water features where individual features within the class have characteristics that vary widely. For example, a county ditch may in some cases be part of a stream and in other cases not part of a stream. The present rulemaking is not an appropriate forum for creating definitions that affect common terms used in multiple statutory chapters affecting multiple agencies and local units of government. It is also not an appropriate forum for the MPCA to provide general determinations that should be properly considered in an individualized assessment. |
| 1/28/2014 | HE-8-15 | 1 | Lynn Clarkowski | Minnesota Department of Transportion (MNDOT) | 395 John Ireland Blvd. St. Paul, MN 55101 | "We would like to see improved definitions of rivers, lakes, shallow lakes and wetlands… also clarification of the applicability of the standards to various water-related features." | See response above to comment HE-8-14-26. |
| | | 2 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "MPCA should provide further clarification on the distinction between Wetlands and Shallow Lakes." | This comment is outside of the scope of the current rulemaking. |

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| | | 3 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "There does not seem to be a definition for rivers and streams that corresponds to the definitions for lakes, shallow lakes and wetlands." | See response above to comment HE-8-14-26. |
| | | 4 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "The references to stream order, wadeable and nonwadeable suggest that different standards for different stream types and flows were developed but have not found any definitions or use of these terms in the proposed rule." | Because the MPCA is not proposing different standards for different stream types and flows, definitions of these terms are not needed. Although the terms are used throughout the SONAR, Book 2 in the discussion of the development of the eutrophication standards, the terms are not used in the proposed rules as a way to classify streams but rather were used for exploratory analyses. The terms "wadeable" and "non-wadeable" are defined in the Technical Support Document (Exhibit EU-1, pg. 29) |
| | | 5 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "It is not clear if the TSS/eutrophication standards would apply to ephemeral streams, riverine wetlands, ditches and swales, storm sewer systems, etc." | See response to comment HE-8-14-26. |
| | | 6 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "The imposition of the eutrophication TSS and other water quality standards on...ditches...is impractical and would be counter productive to achieving clean water goals." | See response to comment HE-8-14-26. |
| | | 7 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | MPCA should consider different standards for different size and type of streams and flow regimes. | The MPCA disagrees. The standards may be applied across a range of stream sizes. However, the MPCA anticipates more monitoring will be conducted on larger streams (nonwadeable), which are more likely to respond to phosphorus overenerichment. |
| | | 8 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "MPCA should clarify ... that eutrophication, TSS and other standards typically do not apply to other linear water related features in the landscape such as road ditches and storm sewer systems ... state that they are not waters of the state." | See response to comment HE-8-14-26. |

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| | | 9 | Lynn Clarkowski | MNDOT | 395 John Ireland Blvd. St. Paul, MN 55101 | "SONAR incorrectly states that MnDOT won't be affected by the proposed rules. But MnDOT is a permittee, it will be affected as a discharger to impaired waters… request that MPCA acknowledge the rulemaking will have an effect on MnDOT." | The MPCA acknowledges that MnDOT may be affected by the changes in the proposed standards as a result of its stormwater discharges. On page 106 of Book 2 of the SONAR the MPCA acknowledged that certain dischargers would incur costs. "Wastewater treatment facilities and stormwater NPDES permittees… will be among those that bear costs of the proposed amendments." MnDOT, as a stormwater permittee, would be included in this broad category of entities that could be affected. The reference cited in the comment (Book 1 of the SONAR ,pg. 20) provides a discussion of the statutorily required notifications for rulemaking. Minn. Stat. § 174.05 only requires specific MnDOT notification for rules adopted under authority of Minn. Stat. § 116.07 (air quality, hazardous waste, solid waste and noise). The proposed amendments are not being adopted under authority of Minn. Stat. § 116.07 and do not address those areas of regulation, therefore, no specific notification of the MnDOT Commissioner was required. The MPCA acknowledges that the cited section of the SONAR should have more correctly stated, "*This is a requirement addressing the Department of Transportation's relationship to rules regarding air quality, solid waste and hazardous waste. None of the amendments being proposed in this rulemaking will affect <u>these aspects of</u> Department of Transportation activities…* " MnDOT staff registered with the MPCA's GovDelivery system were routinely notified throughout the rulemaking process. |
| 1/28/2014 | HE-8-16 | 1 | Leisa Thompson | Metropolitan Council Environmental Services (MCES) | 390 Robert St. N. St. Paul, MN 55101 | "Failure to establish TMDLs prior to establishment of WQBELS would leave nonpoint sources, the largest contributor of phosphorous loading, without limitation on the continuing discharges." | The Clean Water Act requires that water quality based effluent limits be implemented in permits where facilities have the reasonable potential to cause or contribute to a violation in water quality standards (40 CFR 122.44(d)). The manner in which an effluent limit is derived, however, is not the basis for the development of the proposed river eutrophication standards and is therefore out of scope for this rulemaking. |
| | | 2 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The establishment of the restrictive WQBELs for point source phosphorous discharges is an ineffective approach because: | See response to comment HE-8-16- 1. |

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| | | 3 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 1) there are errors in the data being used to establish the WQS, including the fact that the data pre-dates significant phosphorous loading reductions. | Data were up-to-date when the model was developed and the scenarios were run. See response to comment HE-8-16-10. |
| | | 4 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 2) a TMDL analysis should be completed prior to establishing numeric water quality standards so that they are based on a complete assessment of contributing sources. | Federal regulations require that water quality standards be developed prior to the completion and approval of a TMDL document (40 CFR 130.7). |
| | | 5 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 3) MPCA's use of eco-regions as a basis for disparate standard is not supported by data | The ecoregion approach was not a significant aspect of the development of the Pepin standard. The references to ecoregions and Minnesota's lake eutrophication standards on pages 30-31 of Exhibit EU-6 were used to help frame some considerations for Lake Pepin and provide perspective. |
| | | 6 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 4) the proposed approach does not address nonpoint sources, which are the primary phosphorous contributors to the watershed. | Outside of the scope of this rulemaking. However, the following is the MPCA's anticipated approach: Limits will be implemented in a similar manner to the existing lake eutrophication standards. Where existing facilities cannot meet new limits upon reissuance of a permit, a compliance schedule will be developed that is specific to the facility and water body of concern. In addition, facilities retain the right under existing state rules to apply for a variance. |
| | | 7 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 5) recent reductions in phosphorous levels without corresponding decreases in chl-a levels suggest that further total phosphorus reduction may not have the desired benefit. | This is because in-lake phosphorus in Lake Pepin has not been reduced to the point where significant changes in mean Chl-a (Exhibit EU-6, Figure 17) or number of days with severe blooms (Chl-a > 50 ppb) (Exhibit EU-6, Figure 18) have been attained. |
| | | 8 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | 6) the improvements necessary to achieve reductions in line with the proposed standards will not be sustainable. | Costs associated with the implementation of the water quality standard are contained in the SONAR. (See also MPCA's Response to Comments dated 1/28/14: - Attachment I, HE-8-6-22 (line 61) -Spreadsheet Summary of Comments and MPCA Responses). |

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| | | 9 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | ..."furthermore, the lines of evidence relied on to support the selected values lack a definitive, cause-and-effect-based relationship. None of the lines of evidence tie the target phosphorus and chl-a criteria in Lake Pepin to the designated indicators of water quality (i.e. user perception and algal blooms)." | The approach that was used to arrive at the 100 ppb TP standard and 28 ppb Chl-a standard summarized on pages 33-34 in Exhibit EU-6. Linkages to algal bloom frequency and user perceptions are made on those pages and also on pages 21 and 27. |
| | | 10 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The MPCA uses a modeling analysis based on conditions prior to 2007. However, MCES has dramatically reduced its phosphorous effluent load between 2000 and 2011. ... updated effluent data should be used to better characterize current wastewater loadings that are associated with improvements in Lake Pepin." | Data used in model were up-to-date (1985-2006) at the time of model development in 2007 (Exhibit EU-6). Years 2004-2006 represented a time period when there were substantial reductions in the Metro Plant phosphorus loading (MCES submittal HE-8-16 p.4, figure 2-2) and thus, the model incorporated this. |
| | | 11 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "Lake Pepin should be re-assessed for impairment since the conditions that led to the original identification of impaired water quality may no longer exist." | Lake Pepin remains on the 303(d )impaired waters list. Slide 9 in HE-11 presents graphic evidence that severe blooms still occur. |
| | | 12 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The MPCA's readily available and accessible data is more than ten years old and "no credible scientific evidence will show that this data is representative of current conditions." | Data used in original 303(d) assessment were up-to-date as were the data used in model development. |

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| | | 13 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "Based on this review, it appears that equally valid water quality endopoints for Chl-a could be protective of Lake Pepin water quality at higher phosphorous loadings than proposed." | The MPCA disagrees and does not see evidence of this in the submitted comment. |
| | | 14 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The water quality model used has a bias of under-predicting TP levels by approx. 20 ug/L"... As a result, .. Lake Pepin concentrations of TP could be as high as 120 ug/L without exceeding the chl-a criteria." | This is not a valid basis for suggesting that the TP standard could be as high as 120 ug/L. No further information was supplied to support this contention. |
| | | 15 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The UMR-LP modeling analysis used by the MPCA reflects uncertainty associated with model calibration and its application for the various load reduction scenario runs." | There is some inherent uncertainty in all water quality models and this was considered in development of the Lake Pepin water quality standard. |
| | | 16 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "Model is based on outdated data" the calculated effect of the Metro Plant effluent on lake chl-a is overstated by as much as a factor of two." | No evidence is presented by MCES to assess this comment. The model does not need to be updated since there were years included in the model after a significant reduction of phosphorus effluent load from MCES. The modeling analysis included 2005 and 2006, which are years with reduced wastewater loading (MCES submittal HE-8-16, p.4, figure 2-2). The monitored and modeled results for 2006 are highlighted in Exhibit EU-6 (p. 25, 28-30). |
| | | 17 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "Updates to the modeling should be conducted to estimate the phosphorus loading associated with the proposed Chl-a criterion to demonstrate that equally protective loadings can be associated with higher Chl-a endpoints." | The MPCA disagrees with this statement. See the response to comment HE-8-16-15. |

| Date Received | Comment # | Subcomment # | Name | Affiliation | Address | Summary of Comment | Response |
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| | | 18 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "There is enough variability in the method used (to establish pre-modern phosphorus) that one cannot conclusively determine whether the analysis truly reflects TP levels in the chosen time frame." | This was fully addressed at the Lake Pepin TMDL Science Advisory Panel meetings, of which MCES was apart. Relevant discussion is on pages 22-23 of Exhibit EU-6. |
| | | 19 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "MPCA used the 25th percentile of data from minimally impacted streams but EPA guidance uses the 75th percentile." | This was not a reference data set, which is what EPA refers to. Rather it was simply a set of river sites that did not have immediate upstream point source impacts and it was not the definitive basis for proposed criteria. |
| | | 20 | Leisa Thompson | MCES | 390 Robert St. N. St. Paul, MN 55101 | "The user perception study does not reflect data showing that conditions "would be ameliorated" by meeting the proposed chl-a criteria. ." | The user perception study provided the basis for identifying 50 ppb Chl-a as indicative of "severe nuisance blooms." This was agreed upon in the SAP. The UMR-LP model provides a basis for linking phosphorus with the number of days with blooms>50 days (pages 27-29, Exhibit EU-6). |
| | | 21 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "MPCA is proposing new standards without first having completed a TMDL assessment...which may result in a WQS higher than the TMDL would require." | The state Water Quality Standards provide the basis for development of a TMDL. See response to comment HE-8-16-4. |
| | | 22 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | the MPCA is inequitably distributing the burden of trying to reduce phosphorus loading to those with the least current contribution to the problem. | Outside the scope of this rulemaking. See also MPCA's Response to Comments dated 1/28/14: -Attachment I, HE-8-6-22 (line 61) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 23 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "Use of ecoregion criteria lead to the application of the in-stream concentrations applied at the end of pipe discharges because ambient concentrations are often higher than ecoregion statistical values." | Proposed ecoregion criteria are based upon the water quality necessary to support designated uses within select geographical areas. The value of the criteria and manner in which these ecoregions are distributed have no relationship to the methods that may be used to derive effluent limits from river eutrophication standards. |

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| | | 24 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "A more fully developed basis for nutrient criteria is needed and should include stressor-response relationships… reliance on ecoregion reference conditions alone in the development of numeric nutrient criteria is inadequate." | The MPCA did not rely solely on reference conditions. The MPCA has extensively addressed comments relating to the development of the proposed nutrient (eutrophication) criteria. See MPCA's Response to Comments dated 1/28/14: 1)-Memorandum, Section IV, Comments regarding the reasonableness of the scientific analysis supporting the River Eutrophication Standards and also 2) Attachment I, HE-8-3-1 (line 5 ) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 25 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "SAB report says that statistical associations may not be biologically relevant and do not prove cause/effect relationships." | MPCA considered the biological significance of shifts in the biological metrics along the continuum of phosphorus concentrations. MPCA also used quantile regression as a basis for identifying thresholds and these combined techniques provided thresholds that were used as the basis for the final proposed criteria. In addition, these biological analyses were supported by other lines of evidence as recommended by the SAB report (Exhibit EU-20). See MPCA's Response to Comments dated 1/28/14: -Attachment I, testimony of John Hall (line 198) -Spreadsheet Summary of Comments and MPCA Responses. |
| | | 26 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "Point sources are a small percentage of the load to Lake Pepin. Without TMDL prior to standards, it is unclear how MPCA will achieve non-point reductions." | See response to comment at HE-8-16-6. |
| | | 27 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "Despite significant phosphorus reductions, Lake Pepin has not shown a corresponding decline in chl-a levels." | See response to comment at HE-8-16-7. |

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| | | 28 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "The effort to further reduce phosphorus effluent loads will have negative impacts-e.g. increased energy, increased chemical use, greenhouse gas emissions, biosolid production…with little significant improvement in Lake Pepin." | Out of scope for this rulemaking. |
| | | 29 | Leisa Thompson | MCES | 390 Robert St. N.<br>St. Paul, MN 55101 | "Capital investment to further reduce phosphorus discharges is expensive. " | Costs associated with the implementation of the water quality standard are contained in the SONAR. In some cases, implementation of new limits necessary to meet the proposed standards may result in additional costs to permitted entities. |

MPCA Final Response to Comments 2/4/14
Attachment II
(Docket # 60-2200-30791, Revisor ID 4104)

List of Comments/Rebuttals in Response to Proposed Amendments to Minn. R. chs. 7050 and 7053, Relating to Total Suspended Solids and River and Stream Eutrophication Standards
Received 1/6/14 to 2/4/14
(Docket # 60-2200-30791)

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|---|---|
| HE-8-1 | USEPA Region V/Brian Thompson |
| HE-8-2 | Carver County/Tim Sundby |
| HE-8-3 | USEPA Region V/Linda Holst |
| HE-8-4 | Scott County Natural Resources/Paul Nelson |
| HE-8-5 | Poplar River Management Board/Curtis Sparks |
| HE-8-6 | Flaherty and Hood/Steven Nyhus/ Minnesota Environmental Science and Economic Review Board |
| HE-8-7 | Minn. Asphalt Pavement Assoc./Aggregate and Ready Mix Assoc. of Minn./Jill Thomas/Fred Corrigan |
| HE-8-8 | Minn. Center for Environmental Advocacy/Kris Sigford (Attachments A- E) |
| HE-8-9 | Leslie Everett/University of Minn. Water Resources Center |
| HE-8-10 | City of Worthington/Alan Oberloh |
| HE-8-11 | USEPA Region V/Linda Holst |
| HE-8-12 | Scott County Natural Resources/Paul Nelson |
| HE-8-13 | Poplar River Management Board/Curtis Sparks (Attachments A –E) |
| HE-8-14 | Minnesota Cities Stormwater Coalition/Randy Neprash/Jim Hafner |
| HE-8-15 | Minnesota Department of Transportation/Lynn Clarkowski (Attachments 1- 10) |
| HE-8-16 | Metropolitan Council Environmental Services/Leisa Thompson (Attachment 1) |
| HE-8-17 | Minnesota Pollution Control Agency/Shannon Lotthammer (Attachments 1 -6) |
| HE-8-18 | Leslie Everett/University of Minn. Water Resources Center |
| HE-8-19 | Minnesota Pollution Control Agency/Shannon Lotthammer (Attachments 1-2) |